SALES INTO AND OUT OF SELECTED INDUSTRIES

INPUT

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REPORT

June 22, 1992

Submitted to:

AT&T CAPITAL CORPORATION

Submitted by:

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Sales Into and Out Of Selected Industries

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I. BACKGROUND AND METHODOLOGY

A. Background

AT&T Capital Corporation requested on June 5, 1992 that INPUT supply input-output diagrams similar to one for the grocery industry which appears in INPUT's Electronic Commerce program. The industries selected are shown below, along with the SIC numbers used to define the industry group.

	Industry segment	SIC Number
1.	Paper including forms	26 and 2761
2.	Chemicals excluding drugs	28
3.	Drugs	283
4.	Electrical equipment	36
5.	Computers & office equipment	357
6.	Fabricated metal products	34
7.	Instruments	381, 382
8.	Rubber and plastics	30
9.	Wood containers	244

These industries are all manufacturing groups or subgroups.

A draft report was sent to AT&T on June 15, 1992. This report is an expanded version of that draft; the main modification was adding estimates of sales in the merchant wholesale sector.

B. Methodology

INPUT utilized wherever possible U.S. Department of Commerce industry data. The general methodology is as follows:

- The 1987 national input-output tables were used to establish the overall ratios of dollars in and out of an industry. (Note: The "1987" tables were only released in June 1992.)

- As noted in our proposal, INPUT identified industries by SIC codes and translated these into the similar set of codes in the input-output tables.

- These numbers were adjusted according to the most recent industry numbers as shown in the U.S. Industrial Outlook, generally either 1990 or 1991, depending on the industry (given the recent recession, year to year differences are less important than they might have been in other periods). INPUT made a few other adjustments, mainly in the Computer section.

- There were further adjustments made for the sake of consistency -- the numbers do not always exactly tie in between the different Commerce Department sources, as Commerce itself notes.

Factoring in the flows through wholesalers presented special challenges:

- For the purposes of this analysis, the flows through manufacturer-controlled distribution was excluded. Only the independent, so-called "merchant wholesalers" were included.

- Department of Commerce input-output analysis looks only at final use (e.g., by an industry, government or consumers). "Pass-throughs" are not tracked.

- Other Department of Commerce surveys track the sales of wholesalers by product type (product types generally map close to SIC groups). However, there is no tracking of which industries wholesalers sell to.

- For some product flows, e.g., in food-grocery wholesalers-supermarkets, flows are fairly easily tracked with relatively little "leakage" into or out of other producer or wholesaler types.

- However, some other industry producing groups, such as fabricated metal, sell to so many different wholesaler types under so many different product types that tracking becomes quite cloudy.

- For other wholesaler groups, such as auto parts, there is the opposite problem: They draw from a number of different SIC codes (there is no SIC industry producing group for "auto parts").

- Consequently, INPUT's figures for the merchant wholesaler part of product flows should be taken as order of magnitude estimates only. These should still, however, prove useful in understanding overall trade flows.

II. SALES INTO AND OUT OF SELECTED INDUSTRIES

The nine diagrams that follow (Exhibits I-1 to I-9) show the flow of sales into and out of selected industry groups. The diagrams follow a similar format which varies because of the nature of the industry or because of space reasons.

All sales shown in the body of the diagram are the value to the producer, i.e., what they paid for an input or what they realized as an output. Wholesale markups are not included for such areas as "consumers"; this approach makes the figures more comparable.

The footnote for merchant wholesalers estimates the value of their sales to their customers (generally an industry or a retailer).

The diagrams generally account for over 90% of the sales of an industry (including intra-industry flows as well as exports). The figures shown for rubber and drugs account for about 80% of these flows and for about two-thirds of the trade for fabricated metals. In these latter cases, the diversity of the trade meant that there were a number of other industry partners which did not meet the 2% hurdle. INPUT believes that all diagrams give a good picture of significant trade flows.

For paper, chemicals and electrical goods the intra-industry flows are significant. These flows generally involve intermediate products being exchanged at different levels of production. These flows are noted in the diagrams. However, INPUT believes that these flows would have to be understood further before action was taken in an industry.

III. LEADING COMPANIES IN THE INDUSTRY GROUPS SELECTED

The exhibits in this section (Exhibits II-1 through II-9) parallel the industries diagramed in the previous section. The companies listed are the largest companies that are generally active. With one exception, INPUT did not perform an analysis of the nature of the industry: As noted in Exhibit II-9, due to the size and nature of the wood container industry, even the "leading" players tend to be small or medium-sized companies.

IV. CONCLUSIONS

As noted above these figures should be taken as a good indication of general flows of trade within an industry. The flow of trade data is more complicated and very industry-specific, sometimes enterprise-specific:

- Banks and other financial intermediaries may often be involved.

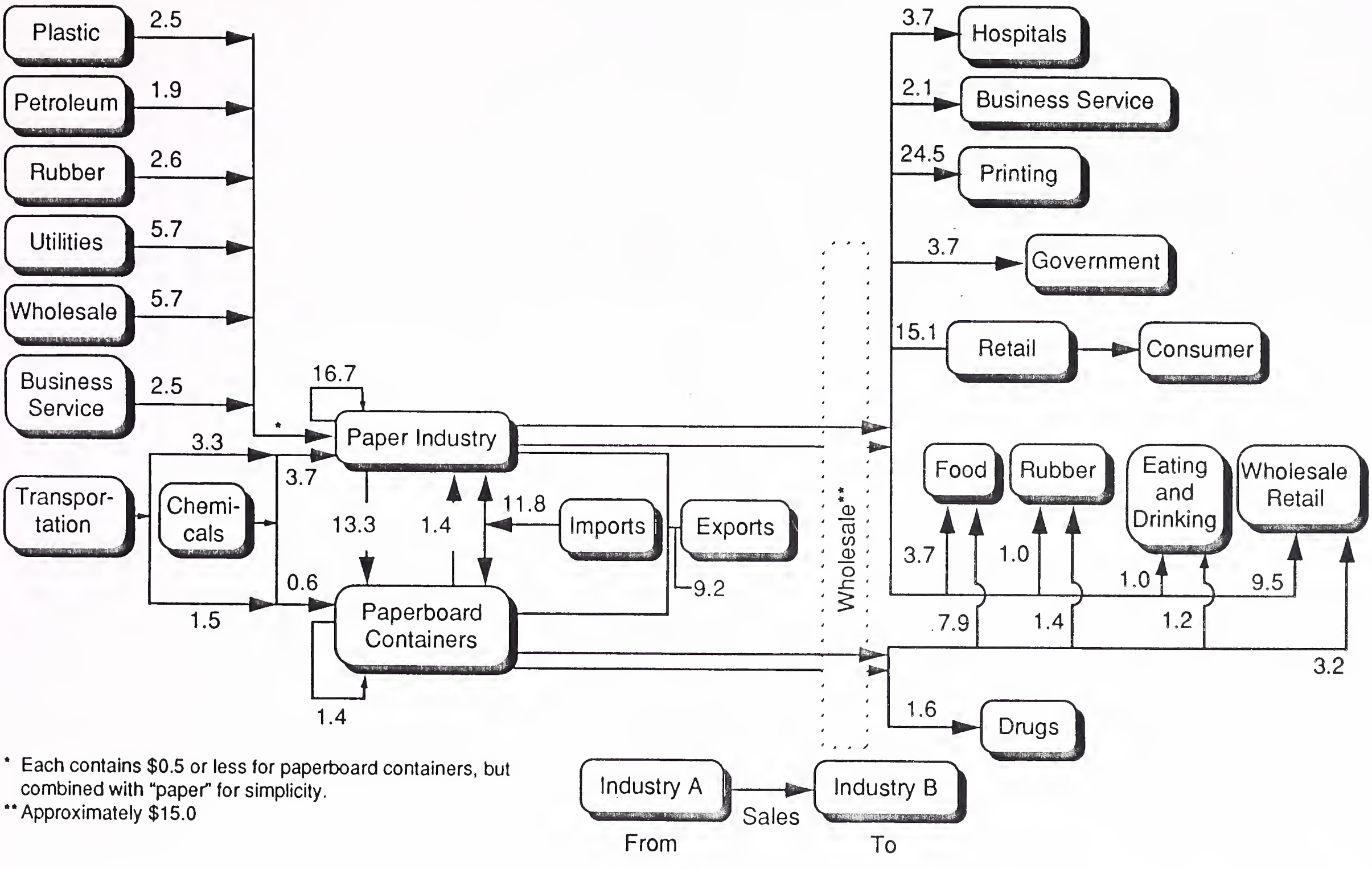
- Where third party transportation is involved these entities are also often involved in exchanging trade data.

- EDI-type data may be handled by a third party using national (or international) standards, by individual pairs of partners using proprietary standards, or by a large number of variants in between these extremes.

For any industry or industry group that will be focused on, a particular diagram in this study would need to be "peeled back" one or more additional layers. Patterns of trade may vary markedly within an industry, depending on which sub-sector is being examined.

Exhibit I-1

Buying and Selling Relationships—Paper
($ Billions)

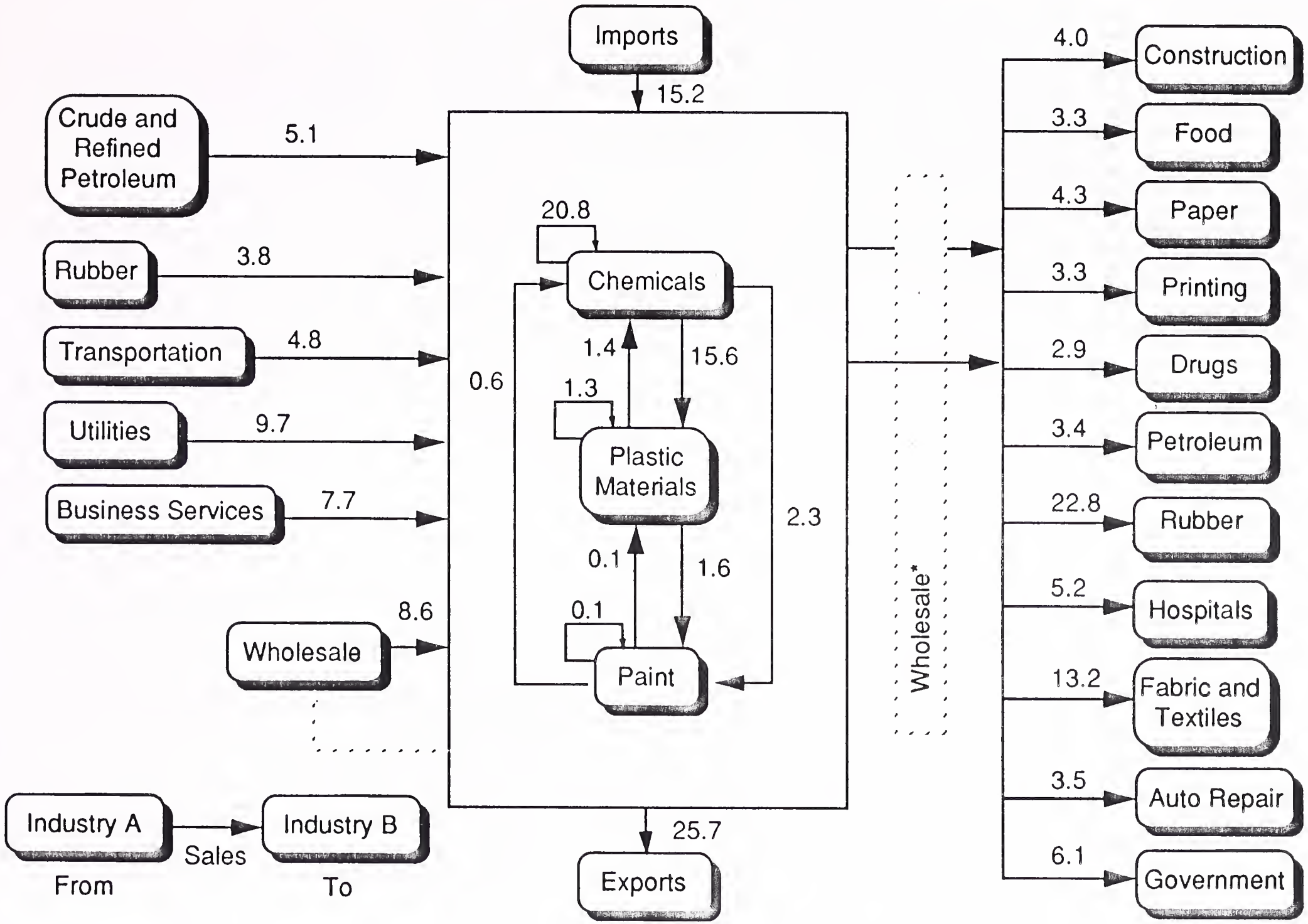


* Each contains $0.5 or less for paperboard containers, but combined with "paper" for simplicity.

** Approximately $15.0

Exhibit I-2

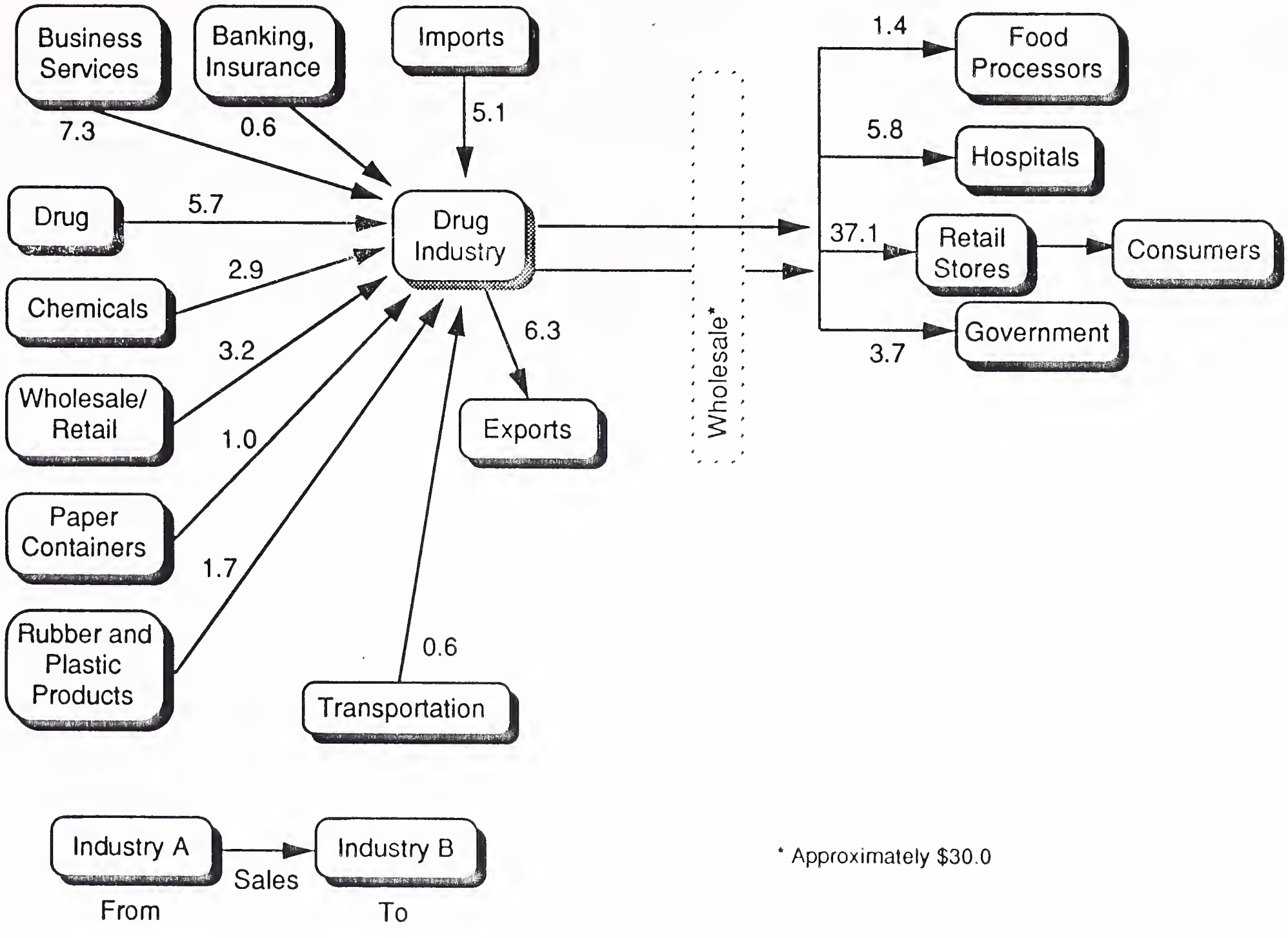
Buying and Selling Relationships—Chemicals (Except Drugs) ($ Billions)



* Approximately $20.0

Exhibit I-3

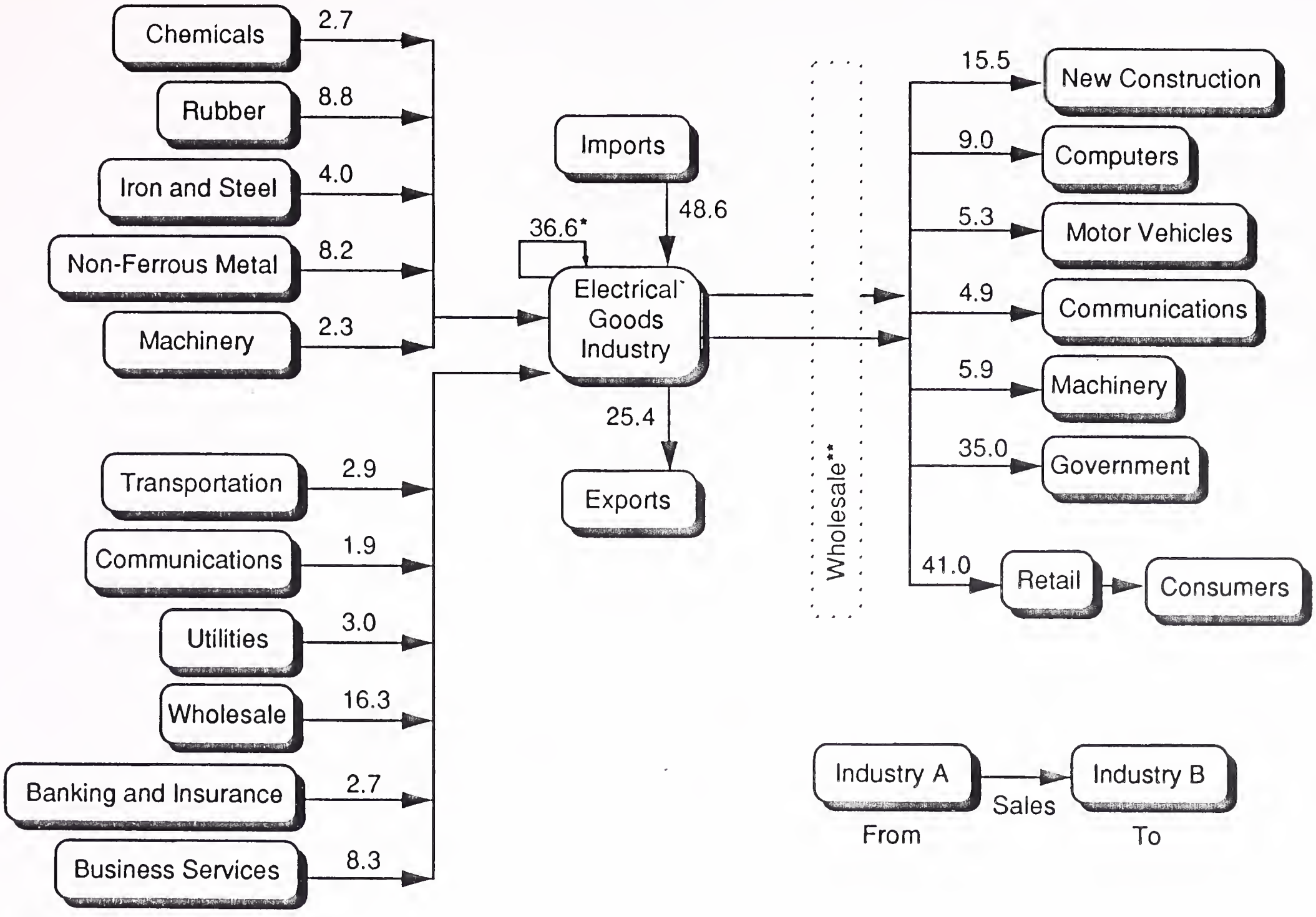
Buying and Selling Relationships—Drug Industry ($ Billions)



* Approximately $30.0

Exhibit I-4

Buying and Selling Relationships—Electrical Goods
($ Billions)



* 25.1 are electronic components for larger assemblies
** Approximately $30.0

Exhibit I-5

Buying and Selling Relationships—Computers and Office Equipment ($ Billions)

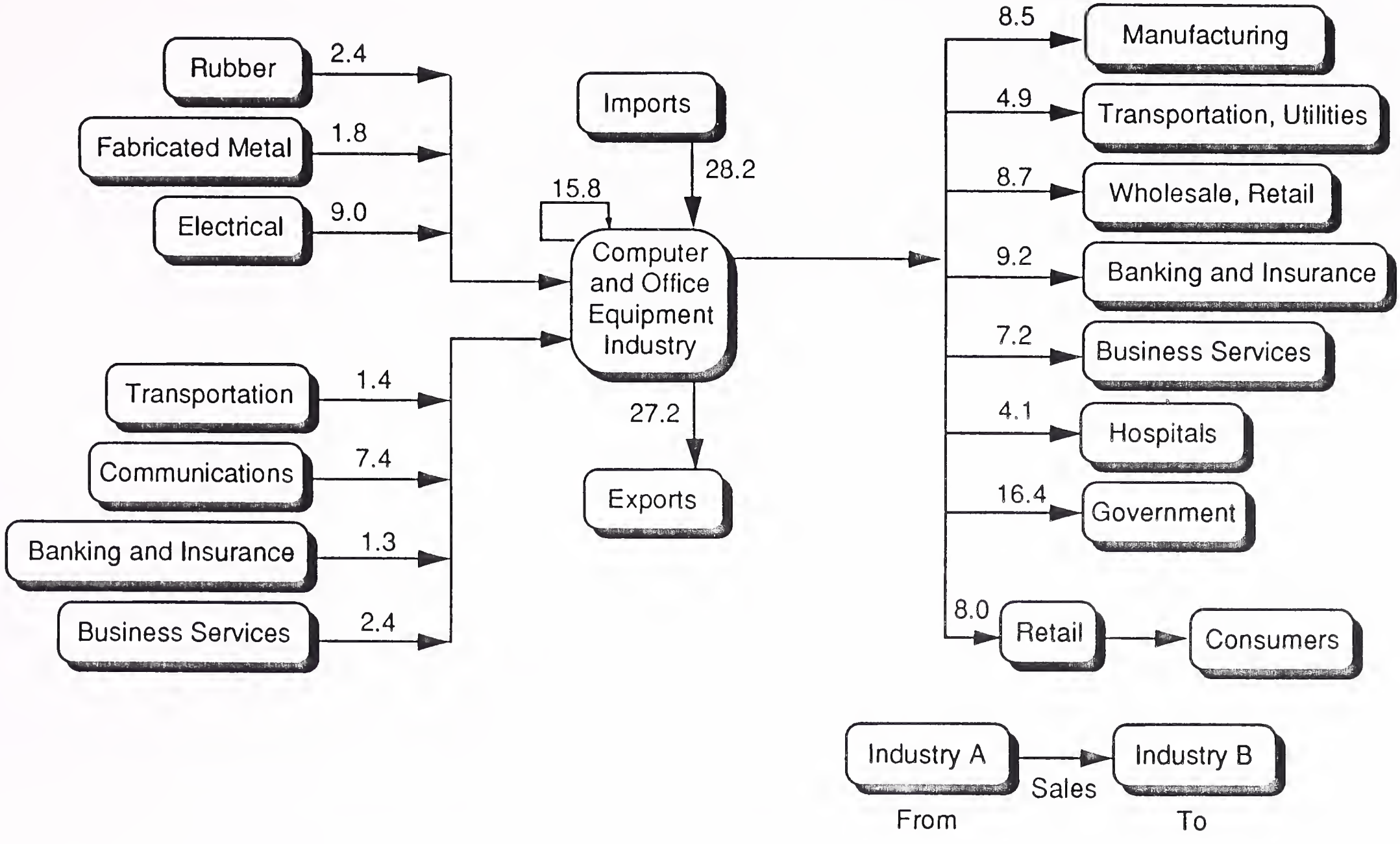
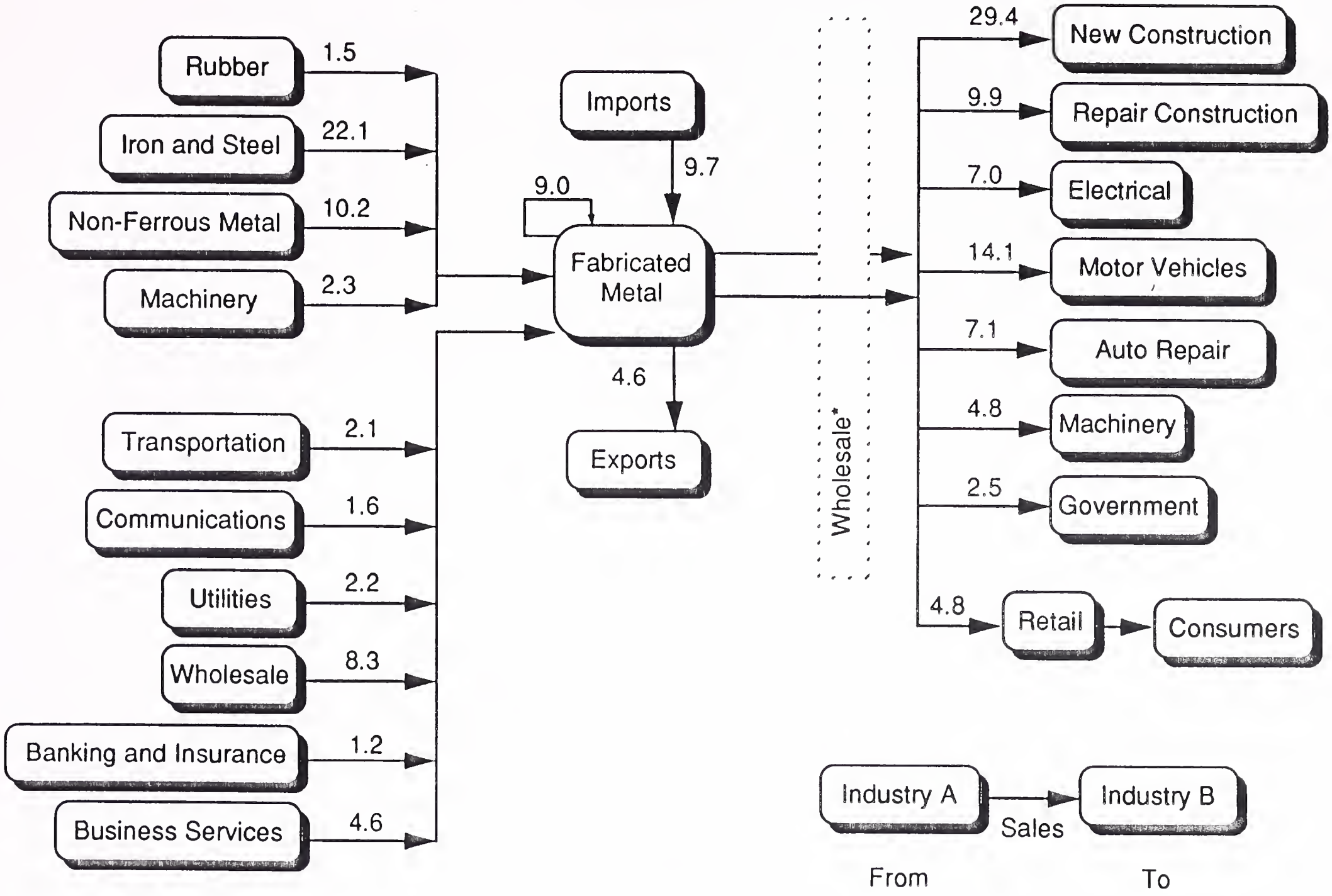


Exhibit I-6

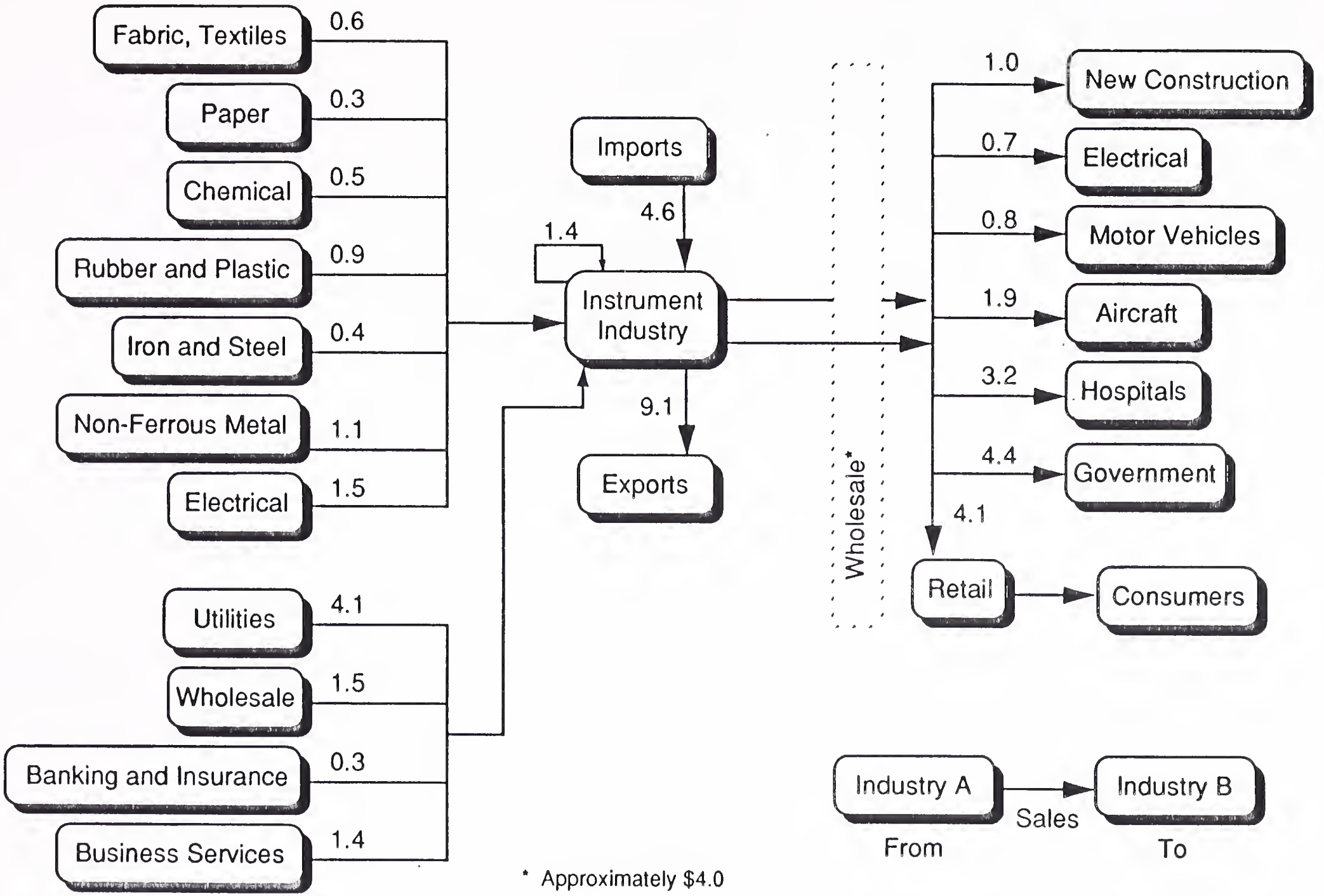
Buying and Selling Relationships—Fabricated Metal
($ Billions)



* Approximately $30.0

Exhibit I-7

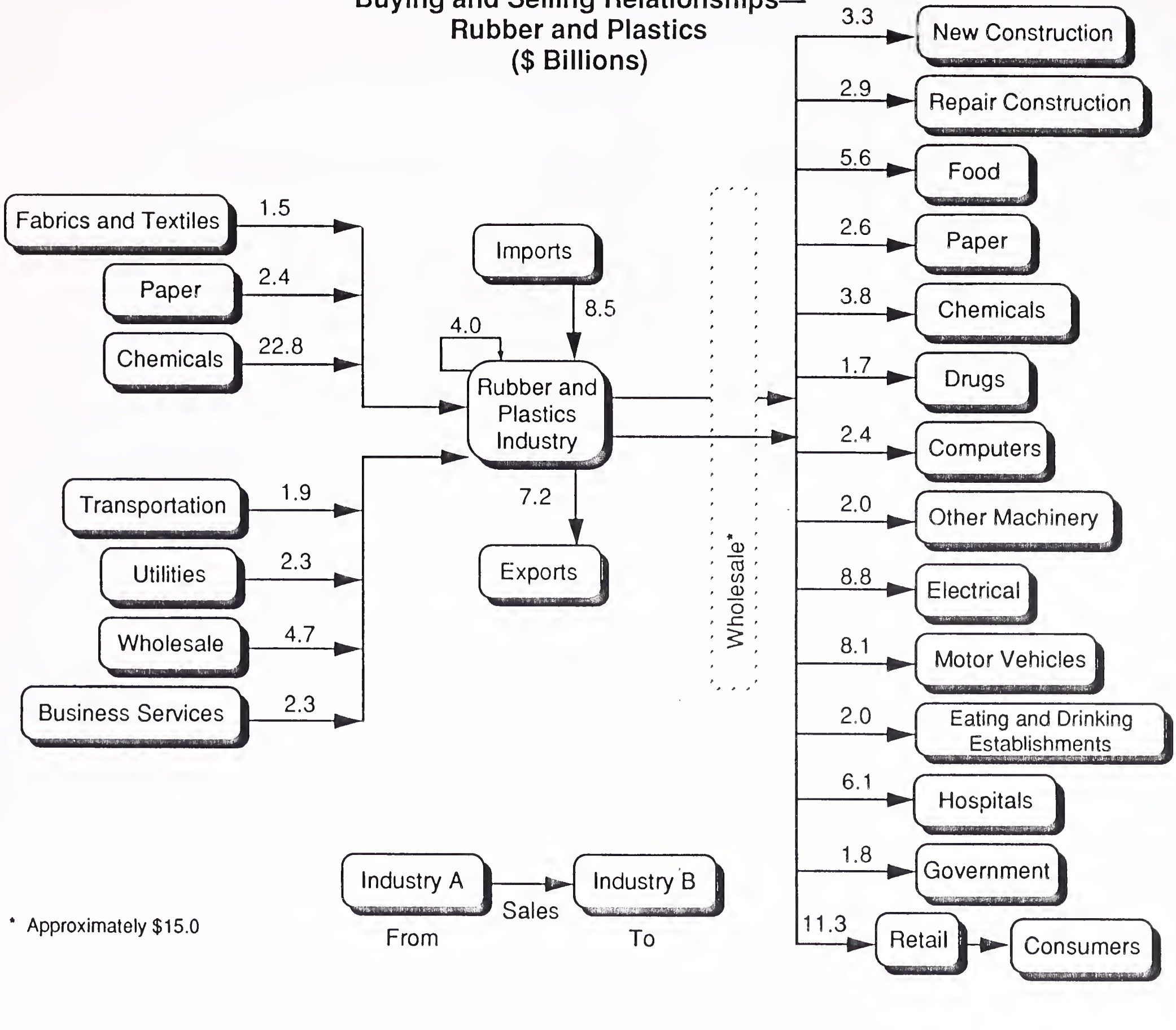
Buying and Selling Relationships—Instrument Industry ($ Billions)



* Approximately $4.0

Exhibit I-8

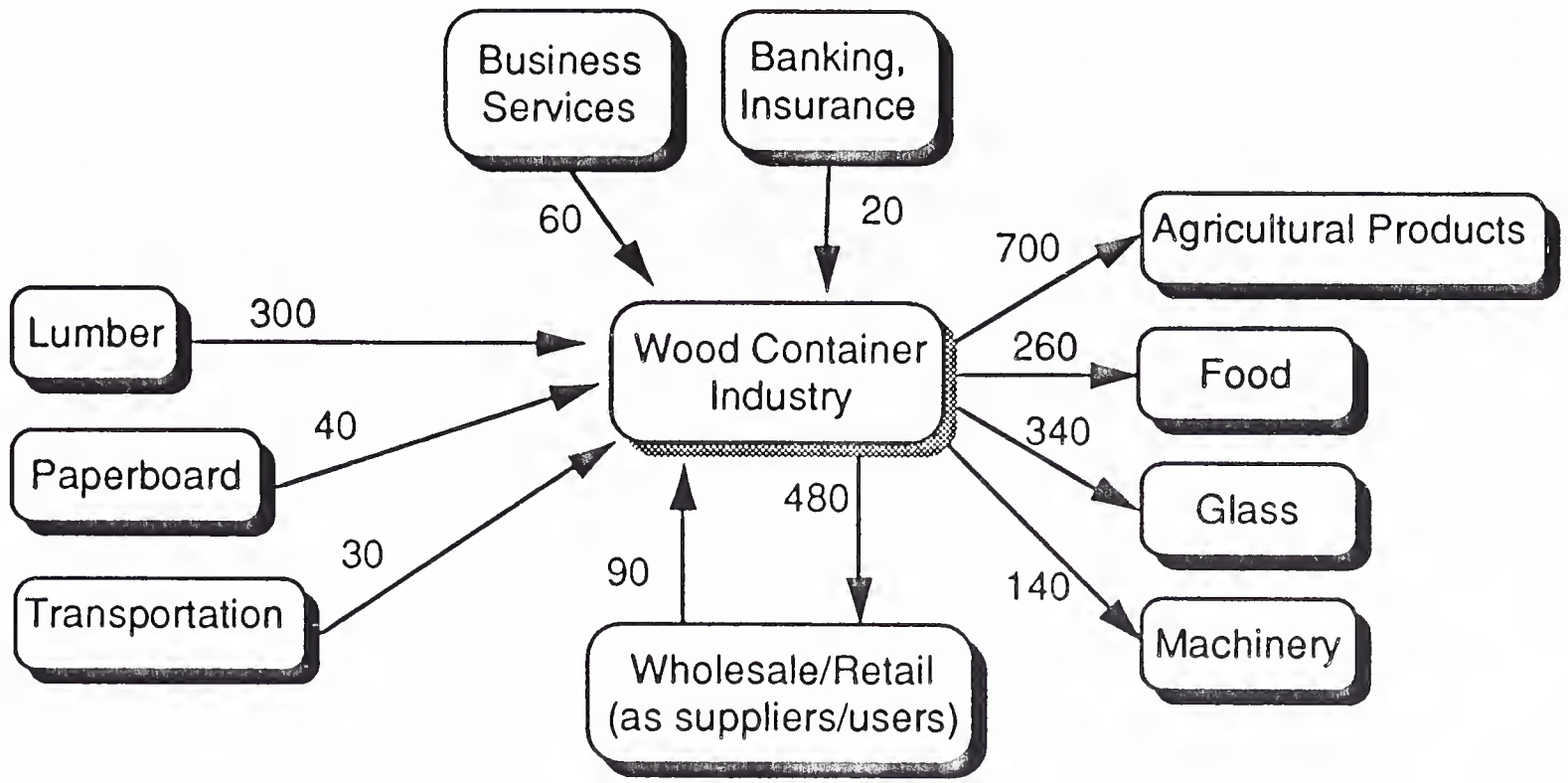
Buying and Selling Relationships—Rubber and Plastics ($ Billions)



* Approximately $15.0

Exhibit I-9

Buying and Selling Relationships—Wood Container Industry ($ Millions)



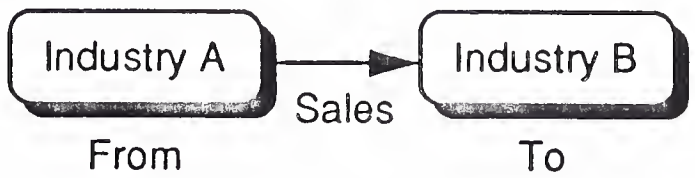


Exhibit II-1

LEADING COMPANIES IN THE PAPER INDUSTRY

Boise Cascade

Deluxe Data

Federal Paper Board

Great Northern Nekoosa

International Paper

Kimberly-Clark

Manville

Mead

Moore Corporation

Scott Paper

Standard Register

Stone Container

Weyerhaeuser

Exhibit II-2

LEADING COMPANIES
IN THE CHEMICAL INDUSTRY

American Cyanamid

BASF

Dow

Du Pont

Grace

Hercules

Hoechst Celanese

Monsanto

Union Carbide

Exhibit II-3

LEADING COMPANIES IN THE DRUG INDUSTRY

Abbott

American Home Products

Amgen

Bristol-Myers Squibb

Carter Wallace

Eli Lilly

Johnson & Johnson

Merck

Pfizer

Schering-Plough

Upjohn

Warner Lambert

Exhibit II-4

LEADING COMPANIES
IN THE ELECTRICAL EQUIPMENT INDUSTRY

AMP

Emerson Electric

GE

Intel

Litton

Motorola

Raytheon

Rockwell

Sunbeam/Oster

Texas Instruments

Westinghouse

Whirlpool

Zenith

Exhibit II-5

LEADING COMPANIES
IN THE COMPUTER AND OFFICE EQUIPMENT INDUSTRY

Amdahl

Apple

Compaq

Digital Equipment

Hewlett-Packard

IBM

NCR/ATT

Pitney Bowes

Sun

Tandem

Unisys

Exhibit II-6

LEADING COMPANIES
IN THE FABRICATED METAL PRODUCT INDUSTRY

Ball

Crown Cork & Seal

Illinois Tool Works

Masco

McDermott

Snap-on

Stanley

Exhibit II-7

LEADING COMPANIES
IN THE ANALYTIC INSTRUMENT INDUSTRY

Becton Dickinson

EG & G

Honeywell

Perkin-Elmer

Tektronix

Exhibit II-8

LEADING COMPANIES
IN THE RUBBER AND PLASTICS PRODUCTS INDUSTRY

A. Schulman

Carlisle

Constar International

Cooper Tire

Goodyear

M.A. Hanna

Premark

Rubbermaid

Standard Products

Exhibit II-9

LEADING COMPANIES
IN THE WOOD CONTAINER INDUSTRY

Note: This industry is made up of many small producers. In addition, some of the large forest product companies may also be involved; however, it would be too small a part of their business to be classified. The following is a seleciton of companies active in this industry.

Allied Container

Anderson Forest Products

Dependable Pallet Service

Eastern Container Corp.

Export Packaging

Interstate Pallet

Jacksonville Box

McIntosh Box and Pallet

Michigan Box

Ridge Pallets

Southern Forest Industries

Wood Fiber Products